

# TM 2163 – LISTERIA OXFORD MEDIUM BASE, MODIFIED

### **INTENDED USE**

For isolation and differentiation of Listeria species from clinical specimens.

### PRODUCT SUMMARY AND EXPLANATION

Listeria monocytogenes is the only species of the genus Listeria that is important as a human pathogen. Listeria seeligeri, Listeria welshimeri and Listeria ivanovii have been related with animal diseases. In any case, all the species are pathogenic between the ovine and bovine cattle. Positive diagnosis of listeriosis can be obtained only by the isolation and cultivation of the responsible bacteria from blood or CSF samples of the affected organisms.

Listeria Oxford Medium Base is based on the formulation described by Curtis et al for isolation of L. monocytogenes from clinical and food specimens.

## **COMPOSITION**

Ingredients	Gms / Ltr
Tryptone	8.900
Beef heart extract	2.700
Proteose Peptone, B	4.400
Yeast Extract	4.400
Lithium Chloride	15.000
Sodium Chloride	4.400
Corn Starch	0.900
Esculin	1.000
Ammonium Ferric Citrate	0.500
Agar	15.300

### **PRINCIPLE**

This medium consists of Tryptone, beef heart extract, proteose peptone B and yeast extract which serves as the source of essential nutrients to the organisms. Corn starch serves to neutralize the toxic metabolites formed. Lithium chloride and the antibiotics inhibit gram-negative bacteria and most gram-positive organisms but certain strains of Staphylococci may grow as esculin negative colonies. Cycloheximide is used to reduce fungal contamination; cefotetan and fosfomycin are inhibitors of bacterial overgrowth. Acriflavin, colistin sulphate and lithium chloride inhibit bacteria other than Listeria species. Alternatively, moxalactam can be added which inhibits both gram-positive and gram-negative bacteria. L. monocytogenes hydrolyzes esculin to esculetin and dextrose. Esculetin reacts with ferric ions and produces black zones around the colonies. Although the selectivity of the medium is enough to allow the isolation and differentiation by direct surface inoculation, a previous dilution of the inoculum is advisable or even more when the sample is highly polluted.

### **INSTRUCTION FOR USE**

- Dissolve 57.5 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 10 minutes.















- Cool to 45-50°C and aseptically add the rehydrated contents of 2 vials of Oxford Listeria Supplement or 2 vials of Listeria Moxalactam Supplement Modified.
- Mix well and pour into sterile Petri plates. Caution: Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin, wash with plenty of water immediately.

## **QUALITY CONTROL SPECIFICATIONS**

: Light yellow to dark yellow homogeneous free flowing powder. **Appearance of Powder** 

Appearance of prepared medium : Dark amber coloured clear to slightly opalescent gel with a blue cast forms in

Petri plates.

: 7.2 ± 0.2 pH (at 25°C)

## **INTERPRETATION**

Cultural characteristics observed with added Oxford Listeria Supplement or Listeria Moxalactam supplement Modified after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Esculin hudrolysis	Incubation Temperature	Incubation Period
Bacillus subtilis	6633	>=10³	Inhibited	0%	-	35-37°C	24-48 Hours
Enterococcus faecalis	29212	>=10³	Inhibited	0%	-	35-37°C	24-48 Hours
Enterococcus hirae	10541	>=10³	Inhibited	0%	-	35-37°C	24-48 Hours
Escherichia coli	25922	>=10³	Inhibited	0%	-	35-37°C	24-48 Hours
Listeria monocytogenes	19111	50-100	Luxuriant	>=70%	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
Listeria monocytogenes	19112	50-100	Luxuriant	>=70%	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
Listeria monocytogenes	19117	50-100	Luxuriant	>=70%	Positive reaction, blackening of medium around the colony	35-37°C	24-48 Hours
Staphylococcus aureus	25923	50-100	Good	40-50%	Negative reaction	35-37°C	24-48 Hours

## **PACKAGING:**

In pack size of 500 gm bottles.











### **STORAGE**

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

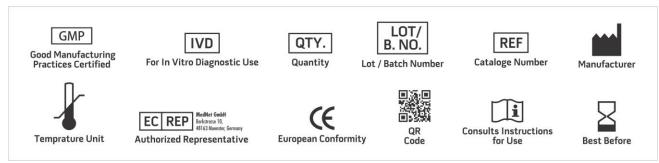
**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

#### **DISPOSAL**

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

### **REFERENCES**

- 1. Curtis G. D. W., Mitchell R. G, King A. F., Griffin E. J., 1989, Lett. Appl. Microbiol., 8:95
- 2. Van Netten P., Peroles I., Van de Mosdik A., Curtis G. D. W., Mossel D. A. A, 1988, Int. J. Food Microbiol., 6:187.
- 3. Hayes P. S, Feeley J. L, Groves L. M, Ajello G. W. and Fleming D. W, 1986, Appl. Environ. Microbiol., 51:438.
- 4. Fernandez G. J. F., Dominguez R. L., Vazzuez B. J. A., Rodriguez F.E. F., Briones D. V., Blanco L. J. L., Suarez F. G., 1986, Can. J. Microbiol., 32:149.



**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

\*For Lab Use Only

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